

WHAT IS CLAIMED IS:

1. A bispecific molecule comprising an anti-CR1 antibody linked to a non-neutralizing antibody that binds a pathogenic agent of an animal.
- 5 2. The bispecific molecule of claim 1, wherein the non-neutralizing antibody is an enhancing antibody.
3. The bispecific molecule of claim 1, wherein the anti-CR1 antibody is cross-linked to the non-neutralizing antibody that binds the pathogenic agent.
4. The bispecific molecule of claim 1, wherein the pathogenic agent is a
- 10 bacterium.
5. The bispecific molecule of claim 1, wherein the pathogenic agent is a virus.
6. The bispecific molecule of claim 1, wherein the pathogenic agent is a microbial toxin.
- 15 7. The bispecific molecule of claim 1, wherein at least one of the anti-CR1 antibody and the non-neutralizing antibody are monoclonal antibodies.
8. The bispecific molecule of claim 1, wherein one or more of the antibodies is modified to reduce its immunogenicity.
9. The bispecific molecule of claim 8, wherein one or more of the
- 20 antibodies is deimmunized.
10. The bispecific molecule of claim 1, wherein the first and second antibody are crosslinked using a crosslinking agent.
11. The bispecific molecule of claim 10, wherein the crosslinking agent is polyethylene glycol (PEG).
- 25 12. The bispecific molecule of claim 1, wherein the anti-CR1 antibody is 7G9.
13. The bispecific molecule of claim 1, wherein the anti-CR1 antibody is 19E9.
14. The bispecific molecule of claim 1, wherein the non-neutralizing
- 30 antibody binds a protective antigen (PA) of a *Bacillus anthracis* toxin.
15. The bispecific molecule of claim 14, wherein the non-neutralizing antibody is 3F3.

16. The bispecific molecule of claim 15, wherein the anti-CR1 antibody is selected from the group consisting of: 7G9 and 19E9.
17. The bispecific molecule of claim 1, wherein the non-neutralizing antibody binds *S. aureus*.
- 5 18. The bispecific molecule of claim 17, wherein the non-neutralizing antibody binds protein A.
19. A bispecific molecule comprising an anti-CR1 antibody linked to an antibody that is selected from the group consisting of: 3F3, 2F9, 3F10, 3D2, 16E11, 2C11, 6C3, and an antibody that recognizes protein A.
- 10 20. A bispecific molecule comprising a first antibody that binds a CR1 receptor coupled to a second antibody that binds to a protective antigen component of anthrax toxin but does not inhibit the binding of the protective antigen component of the anthrax toxin to cells.
21. A method of treating or preventing a disease associated with presence of 15 a pathogenic agent of an animal in the circulation of a subject, comprising administering to the subject a therapeutically or prophylactically effective amount of a bispecific molecule comprising an anti-CR1 antibody linked to a non-neutralizing antibody that binds to the pathogenic agent.
22. The method of claim 21, wherein the non-neutralizing antibody is an 20 enhancing antibody.
23. The bispecific molecule of claim 21, wherein the first and second antibody are crosslinked using a crosslinking agent.
24. The bispecific molecule of claim 23, wherein the crosslinking agent is polyethylene glycol (PEG).
- 25 25. The method of claim 21, wherein one or more of the antibodies is a monoclonal antibody.
26. The method of claim 21, wherein one or more of the antibodies is modified to reduce its immunogenicity.
27. The method of claim 21, wherein the subject is a human.
- 30 28. The method of claim 21, wherein the anti-CR1 antibody is selected from the group consisting of: 7G9 and 19E9.
29. A method of treating or preventing bacterial infection in a subject, comprising administering to the subject a therapeutically or prophylactically effective

amount of a bispecific molecule comprising an anti-CR1 antibody linked to a non-neutralizing antibody that binds to a bacterium.

30. The method of claim 29, wherein the bacterium is a gram negative bacterium.
- 5 31. The method of claim 29, wherein the bacterium is a gram positive bacterium.
32. The method of claim 31, wherein the bacterium is *S. aureus*.
33. The method of claim 29, wherein the non-neutralizing antibody is an enhancing antibody.
- 10 34. The method of claim 29, wherein the anti-CR1 antibody is cross-linked to the non-neutralizing antibody that binds the bacterium.
35. The method of claim 29, wherein the anti-CR1 antibody and the non-neutralizing antibody are monoclonal antibodies.
36. The method of claim 29, wherein the subject is a human.
- 15 37. The method of claim 29, wherein the anti-CR1 antibody is selected from the group consisting of: 7G9 and 19E9.
38. The method of claim 32, wherein the non-neutralizing antibody is an antibody that recognizes protein A.
39. The method of claim 38, wherein the anti-CR1 antibody is selected from 20 the group consisting of: 7G9 and 19E9.
40. A method of treating or preventing a viral infection in an animal subject, comprising administering to the subject a therapeutically or prophylactically effective amount of a bispecific molecule comprising an anti-CR1 antibody linked to a non-neutralizing antibody that binds an epitope of the virus.
- 25 41. The method of claim 40, wherein the antibody binds to an envelope (E) protein of the virus.
42. The method of claim 40, wherein the non-neutralizing antibody is an enhancing antibody.
43. The method of claim 40, wherein one or more of the antibodies is a 30 monoclonal antibody.
44. The method of claim 40, wherein the subject is a human
45. The method of claim 21, wherein the anti-CR1 antibody is selected from the group consisting of: 7G9 and 19E9.

46. A method of prophylactically preventing or reducing the symptoms of exposure to anthrax spores comprising, administering a bispecific molecule comprising a first antibody that recognizes a C3b receptor coupled to a second antibody that binds to a protective antigen component of anthrax toxin but does not inhibit the binding of the protective antigen component of the anthrax toxin to cells, to a subject at risk of exposure to anthrax spores to thereby prevent or reduce the symptoms of exposure to anthrax spores.

5 47. The method of claim 46, wherein the C3b receptor is CR1.

48. The method of claim 46, wherein one or more of the antibodies is modified to reduce its immunogenicity.

10 49. The method of claim 46, wherein one or more of the antibodies is a monoclonal antibody.

50. The bispecific molecule of claim 46, wherein the first and second antibody are crosslinked using a crosslinking agent.

15 51. The bispecific molecule of claim 46, wherein the crosslinking agent is polyethylene glycol (PEG).

52. The method of claim 46, wherein the anthrax toxin is a mutant form that does not bind to antibodies that inhibit the binding of the protective antigen component of the toxin to cells.

20 53. The method of claim 46, wherein the antibody that binds to a protective antigen component of anthrax toxin is selected from the group consisting of: 3F3, 2F9, 3F10, 3D2, 16E11, 2C11 and 6C3.

54. A method of reducing the symptoms of exposure to anthrax spores in a population, comprising, administering a bispecific molecule comprising a first antibody that recognizes a C3b receptor coupled to a second antibody that binds to a protective antigen component of anthrax toxin but does not inhibit the binding of the protective antigen component of the anthrax toxin to cells, to multiple subjects at risk of exposure to anthrax spores to thereby prevent or reduce the symptoms of exposure to anthrax spores.

25 55. A method of therapeutically treating the symptoms of exposure to anthrax spores comprising, administering a bispecific molecule comprising a first antibody that recognizes a C3b receptor coupled to a second antibody that binds to a protective antigen component of anthrax toxin but does not inhibit the binding of the

protective antigen component of the anthrax toxin to cells, to a subject exposed to anthrax spores to thereby prevent or reduce the symptoms of exposure to anthrax spores.

56. The method of claim 54 or 55, wherein the C3b receptor is CR1.

57. The method of claim 54 or 55, wherein one or more of the antibodies is modified to reduce its immunogenicity.

58. The bispecific molecule of claim 54 or 55, wherein the first and second antibody are crosslinked using a crosslinking agent.

59. The bispecific molecule of claim 58, wherein the crosslinking agent is polyethylene glycol (PEG).

10 60. The method of claim 54 or 55, wherein the anthrax toxin is a mutant form that does not bind to antibodies that inhibit the binding of the protective antigen component of the toxin to cells.

61. The method of claim 54 or 55, wherein the antibody that binds to a protective antigen component of anthrax toxin is selected from the group consisting of:

15 3F3, 2F9, 3F10, 3D2, 16E11, 2C11 and 6C3.

62. A method of enhancing the protective effect of a non-neutralizing antibody that binds a pathogenic agent of an animal, comprising linking the antibody to a second antibody that binds to CR1.